

We claim:

1. A system for predicting ictal onset in a subject comprising:
  - a. a first data sensor positioned on the scalp of a subject near the focal point of  
5 ictal onset;
  - b. a second data sensor positioned on the scalp of said subject, wherein said second data sensor is remote from said first data sensor; and
  - c. a processor configured to analyze data collected from said first and said  
10 second data sensors to provide a nonlinear mathematical manipulation of said data collected from said first and from said second data sensors, wherein said nonlinear mathematical manipulation produces a first marginal predictability value, and a second marginal predictability value.
2. The system of claim 1, wherein said first and said second data sensors comprise  
15 electrodes.
3. The system of claim 2, wherein said electrodes record electroencephalogram data from said subject.
- 20 4. The system of claim 1, wherein said processor compares the difference between said first marginal predictability value and said second marginal predictability value.
5. The system of claim 4, wherein said difference between said first marginal predictability value and said second marginal predictability value decreases indicating ictal  
25 onset.
6. The system of claim 1, further comprising a subject warning device configured to receive information from said processor.
- 30 7. The system of claim 6, wherein said information comprises information predictive of an ictal onset.

8. The system of claim 6, wherein said subject warning device comprises at least one alarm selected from the group consisting of audible, visual, and tactile alarms.

9. The system of claim 1, wherein said processor further comprises a computer  
5 readable memory.

10. The system of claim 1, further comprising an anti-seizure agent administering device in communication with said processor wherein said anti-seizure agent administering device administers an anti-seizure agent to the subject.

10 11. The system of claim 10, wherein said anti-seizure agent administering device is selected from the group consisting of micro pumps and electrical stimuli devices.

12. A method for predicting ictal onset in a subject comprising:

15 a. providing:

i. a subject;

ii. a system configured to detect ictal onset, wherein said system comprises: a first data sensor positioned on the scalp of said subject near the focal point of ictal onset; a second data sensor positioned on the scalp of said subject,  
20 wherein said second data sensor is remote from said first data sensor;

iii. a processor configured to analyze data collected from said first and said second data sensors to provide a nonlinear mathematical manipulation of said data collected from said first and from said second data sensors, wherein said nonlinear mathematical manipulation produces a first marginal predictability value,  
25 and a second marginal predictability value; and

iv. a subject warning device in communication with said processor; and

b. contacting said subject with said system;

c. determining said first marginal predictability value and a second marginal predictability value;

30 d. predicting ictal onset in said patient by difference in said first marginal predictability value and a second marginal predictability value.

13. The method of claim 12, wherein said first and said second data sensors comprise electrodes.

14. The method of claim 12, wherein said electrodes record electroencephalogram data  
5 from said subject.

15. The method of claim 12, wherein said processor compares the difference between said first marginal predictability value and said second marginal predictability value.

10 16. The method of claim 15, wherein said difference between said first marginal predictability value and a second marginal predictability value decreases indicating ictal onset.

17. The method of claim 12, further comprising providing a subject warning device  
15 configured to receive information from said processor.

18. The method of claim 17, wherein said information comprises information predictive of an ictal onset.

20 19. The method of claim 17, wherein said subject warning device comprises at least one alarm selected from the group consisting of audible, visual, and tactile alarms.

20. The method of claim 12, further comprising an anti-seizure agent administering device in communication with said processor wherein said anti-seizure agent administering  
25 device administers an anti-seizure agent to the subject.

21. The system of claim 20, wherein said anti-seizure agent administering device is selected from the group consisting of micro pumps and electrical stimuli devices.

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